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ABSTRACT

A study examined the Harbor City Learning (HCL) Program in Baltimore, Maryland to determine how educational programs sponsored by the Comprehensive Employment and Training Act (CETA) could better prepare inner city youth to perform successfully in a number of jobs or occupations. Specifically, the study investigated the characteristics of the students who become involved in regular in-school programs and in the alternative HCL program, the differential program impact on the study groups, and empirical evidence supporting the implications of major theories of career development. Selected for the study population were 457 black youths who graduated from in-school programs and from the HCL Center. After examining data pertaining to the subjects' demographic characteristics, aptitudes, school performance, last regular school curricula, and job requirements, researchers concluded that the HCL Center is serving a useful purpose inasmuch as its vocationally oriented training program has helped participants acquire the same aptitude levels as their peers from the regular schools. In addition, the HCL outreach program managed to graduate students whose early school records were very poor. However, in regard to job performance, the results are discouraging for both the regular school and HCL graduates. (MN)

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## Summary Report

The majority of people demanding manpower services in the Baltimore, Maryland area are under 25 years of age. Many are ill-equipped to compete for an already limited number of jobs. Most of these disadvantaged individuals are school dropouts and chronic truants. When these groups are added to high school graduates seeking employment, the seriousness of the problem is evident - approximately 17,000 Baltimore youths seeking work each year.

To alleviate the problem of transition from school to world of work, Mayor's Office of Manpower Resources in Baltimore created the Harbor City Learning (HCL) program, an alternative educational program model for both in-school and out-of-school youths. The HCL program combined the Comprehensive Employment and Training Act (CETA) Title 1 monies with resources from the Baltimore City Public Schools, and provided a comprehensive educational system on a year-round basis: part-time work experience and training in the public sector for those in traditional in-school programs; an alternative curriculum mixed with paid job experiences for school dropouts who were enrolled in the HCL center.

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The research project at Coppin State College represented a cooperative effort of the college and Mayor's Office to examine how educational experiences and programs sponsored by CETA could better prepare the inner-city youth to perform successfully in a number of jobs or occupations. Movement from training to job was the central concern of the study. The HCL program was particularly selected for this field research, because it offered experience-based career education and its student body consisted of disadvantaged youth.

## Purpose

As mentioned above, the study basically dealt with the noncognitive output of job adjustment. Specifically, its purpose was threefold:

(1) to determine the characteristics of the students who became involved in the regular in-school programs, and in the alternative program in the HCL center;

(2) to examine the differential program impact on the study groups;

(3) to present empirical evidence, if any, supporting the implications of major theories of career development, especially Maslow's (1954) theory of "needs hierarchies" and Holland's (1973) typology of persons and occupations, on the low-achieving, inner-city youth.

## Method

### Subjects

The subjects consisted of four study groups: (1) Concurrent In-School (CIS) (n = 91), (2) Concurrent Alternative (CA) (n = 49), (3) Predictive In-School (PIS) (n = 196), (4) Predictive Alternative (PA) (n = 116). For the CIS Group, the subjects were drawn from the regular in-school program graduates of 1977 and 1978 who were continuously employed for six months or

more. In the CA Group, the subjects were composed of the alternative HCL program graduates of 1977 and 1978 who had completed at least six months on the job. For the PIS Group, the subjects were chosen from the senior level students in nine public schools of Baltimore City. For the PA Group, the subjects were drawn from the HCL center recruits at the junior level who would complete the alternative program in two years. The age range for the CIS and CA Groups was 18 - 23, and for the PIS and PA Groups was 15 - 20. All the subjects in the four study groups pertained to the black community.

According to the original research design, the study was to be conducted in two phases. In the initial phase, the subjects' abilities, attributes and demographic characteristics would provide the basic information on job success separately for the CIS Group and the CA Group. In the subsequent phase, these traits and characteristics would be compared with those of the corresponding predictive groups, namely, the PIS Group and the PA Group. The idea was to follow these latter groups through the training programs to placement, and then to satisfactory completion of six months on the job. From this validation over time, profiles would emerge which would identify the abilities, attributes and characteristics of job success of the inner-city youth in the regular school program as also of the school dropout and the delinquent youth in the alternative program at the HCL center.

The research design had, however, to be modified to a certain extent, as the predictive validation component of the study had to be finally dropped. At the start of the project, it was clear that, due to paucity of fund, the subjects in the PA Group could not be followed for three years till their placement on jobs and assessment of job adjustment thereafter. The PIS Group had also to be dropped from consideration, as a serious nonresponse bias occurred in the criterion measure. Only 34 subjects from the original sample

of 196 in this group returned the completed questionnaire on job satisfaction. The limited input measures collected on the PIS Group and the PA Group still provided some insight into the characteristics of the students enrolled in the in-school program and in the HCL center.

Description of Experimental Variables

In order to obtain predictive measures on abilities, aptitudes and interests, five sets of inputs including demographic characteristics were used in the study. These are briefly described below:

I. Demographic Characteristics

1. Sex: Male = 1; Female = 0

2. Tract Classification (based on family earning) (Baltimore City Regional Planning Council, 1978)

| Level of Earning | Coded Value (Based on Mid-Point of Interval) |
|---|---|
| Less than $ 7,000 | 3.5 |
| $ 7,000 – 9,999 | 8.5 |
| $10,000 – 14,999 | 12.5 |
| $15,000 – 24,999 | 20.0 |
| $25,000 plus | 30.0 |

Note. The decimal point was removed in statistical analysis.

II. Aptitude Measures

3. GATB – G

4. GATB – V

5. GATB – N

Nine aptitude measures are obtained from the General Aptitude Test Battery. Three major aptitude measures were used in the study: G - Intelligence (closely related to doing well in school), V - Verbal Aptitude, and N - Numerical Aptitude.

III. School Performance

6. GPA (Last 2 yrs.)

For the in-school program students, the Grade Point Average was obtained for Grades 11 and 12. For the Alternative program students, the Grade Point

Average was worked out for the last two years in the regular school prior to their enrollment at the HCL center. In the regular school, the passing score in each subject is 60 out of a maximum of 100. The numerical value of the GPA was computed from the actual score obtained by the student in each subject during the last two years. The decimal point was removed from the numerical average in statistical analysis.

7. Jr. High Attendance

Good (absent for 0 - 10 days) = 1
Fair (absent for 11 - 19 days) = 2
Poor (absent for 20 days or more = 3

Note. In Jr. High Attendance, lower scores indicate better school attendance.

IV. Curriculum (Last Regular School)

8. Vocational: Voc. Curr. = 1; Other = 0

9. General : Gen. Curr. = 1; Other = 0

The curricula of the regular schools to which the study subjects originally belonged were categorized into three groups, namely, Vocational, General, and Academic, based on the program emphases. For qualitative classifications of Curriculum, dummy variable coding (Cohen & Cohen, 1975) was used in which 1, 0 dichotomies were applied to each of the Vocational and General Academic Curricula as noted above. The third group, Academic Curriculum, served as a reference group, that is, without any explicit representation as an independent variable.

V. Holland Typology

10. GED Level

General Educational Development (GED) Level (Holland, 1973), an estimate of the educational level required to perform a job, was obtained from the Dictionary of Occupational Titles (U.S. Department of Labor, 1965). GED is reported on a scale from 1 to 6.

Levels 1 - 2: Elementary school, or no special training;
Levels 3 - 4: High school and some college, technical or business training;
Levels 5 - 6: College training

John L. Holland's occupational codes and GED Level for the 1970 census detailed occupational titles, used in the study, were obtained from Gottfredson & Brown (1978).

11. Vocational Preference - Job Congruence

The Vocational Preference Inventory (VPI) (Holland, 1973) is a device for assessment of a person's resemblance to each of the six occupational types, that include all of the most common occupations in the United States. The personality types and the occupational classification use the same concepts in

a single theoretical system. Thus the six main VPI scales representing the six groups of occupations are: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). The summary code in the VPI is a concise description of a person's resemblances to three groups of models ranked in order of importance. For purposes of this study, the agreement between a subject's VPI summary code and the code of his current occupation was computed with a dummy variable as described below:

First letter ov VPI code matched first letter of occupational code = 1; else = 0.

VI. Criterion

12. MSQ General

The Minnesota Satisfaction Questionnaire (MSQ), a 20-scale Likert format questionnaire, was developed by the Work Adjustment Project, University of Minnesota (Weiss, D. J., & others, 1967). It is designed to measure overall job satisfaction and satisfaction with various aspects of the individual's work environment. Scoring of the MSQ can include a General Satisfaction scale. This scale uses 20 items (one from each of the twenty scales), yielding a score ranging from 20 to 100. In this study, the General Satisfaction score was used as the criterion measure for job adjustment.

Procedure

After some of the administrative bottlenecks had been streamlined, the project operation actually started in July 1978. Lists of 1977 and 1978 graduates from the in-school program as also from the HCL center were obtained from Mayor's Office. These documents were used for selection of subjects for the concurrent validation phase of the study. For the predictive validation study, the information about the prospective subjects was gathered from Mayor's Office after the 1978 Fall enrollment, which had been extended to mid-October. The project staff time and effort were mostly expended on establishing the initial telephone contact with the subjects for all the four study groups, and on contacting the same individuals a number of times to persuade them to appear for the testing sessions. Individual letters were addressed to the prospective subjects, and press release and radio announcements were also made for the purpose. In all these communications, the intent of the project was explained and the mode of reimbursement of pocket expenses for participating subjects

was also mentioned. In spite of the monetary incentive, the subjects were generally shy of taking tests.

In all 34 testing sessions were conducted from July 1978 to April 1980, in which 457 subjects participated. The predictive validation (that is, PIS and PA) group subjects were tested between September 1978 and March 1979. The tests were administered in small groups in the morning and afternoon sessions. The MSQ for the criterion measure was only administered to the concurrent validation (that is, CIS and CA) group subjects who had completed six months on the job. A graduate from the Master's program in Rehabilitation Counseling at Coppin State College, employed as a Research Associate in the project and especially trained in the GATB, administered the test battery to all the subjects. An official from the Planning, Research and Evaluation Center of Baltimore City Public Schools, who had just retired from service, was recruited as a Research Associate to supervise the testing sessions and to administer the other tests, namely, the VPI and the MSQ. Student assistants with orientation in tests and measurement also helped in the test administration. A second official from the Planning, Research, and Evaluation Center of Baltimore School System was engaged on a part-time basis to serve as a liaison between the project and the public schools. She spearheaded the efforts in collating the school-related data for the project subjects.

In the PIS Group, 166 subjects out of the original sample of 196, graduated from school in March-August, 1979. Five of these subjects had to be left out of consideration, because of non-availability of their school records. The PIS Group subjects, numbering 161, would have normally completed six months on the job after February, 1980. Efforts were made during the next six months, March-August, 1980, to track these individuals, in order to obtain their MSQ measures. Identifying and locating the subjects, and

enlisting their participation in the project posed a major problem for this followup study. Only 40 subjects could be reached, who met the eligibility criteria of completing six months on the job. The MSQ forms for criterion measure were sent to all of them. With much exhortation, 34 completed forms could be retrieved from these subjects. As mentioned earlier, the predictive validation component of the in-school program had to be finally abandoned because of insufficient response.

Analysis of Data

Initially, measures were obtained for 25 experimental variables including the criterion, for the two concurrent validation groups (namely, the CIS and the CA) and the PIS Group. However, some of the predictor variables had to be dropped because of large missing data, which would have contributed to biases in item nonresponse. Finally, the number of predictor variables was reduced to eleven primarily in consideration of their theoretical importance. Such reduction was also essential, because of the restricted sample sizes of the study groups. The eleven predictor variables were arranged into five hierarchical sets, as described earlier.

In order to determine the distinctive characteristics of the subjects in the four study groups, t tests were conducted for comparisons of selected pairs of these groups. For the PIS Group and the PA Group, these tests were limited to the predictor variables for which values were available. No further statistical analyses could be conducted for these two groups, in the absence of related data.

Zero-order correlations were computed between all variables, separately for the CIS Group and the CA Group. The purpose was to find the degree and direction of relationship of each of the predictor variables with the criterion, and to determine the "problem of multicollinearity" (that is, the existence of substantial correlation), if any, between the predictor variables.

Separate stepwise regression analyses were carried out for the CIS Group and the CA Group, and each MSQ measure. This experimental approach was designed to provide the maximum $R^2$ with a minimum number of predictor variables. Stepwise regressions were followed by the hierarchical analyses of predictor sets, the ordering of such sets being made on an a priori basis. This variance partitioning strategy reported the $R^2$ for the MSQ measure regressed on to the first set of variables, and then it reported additions t $R^2$ that resulted from adding each of the remaining sets in order with previous sets of variables still in the equations. Within each set, the variance uniquely explained by each predictor variable was calculated, controlling for all previous sets and all other variable(s) in the particular set.

## Results and Discussion

### Comparison of Study Groups

The descriptive statistics for the experimental variables in respect of the four study groups are presented in Table 1. The t values and the levels of significance for comparison of means for selected pairs of groups are depicted in Table 2. The results clearly indicated that the PIS Group was superior to the other three groups in the areas of Tract Classification (a proxy variable for socioeconomic status), Aptitude Measures and GPA (Last 2 yrs.). In the case of Sex, the lower mean value for the PIS Group was due to the fact that this group had a higher proportion of females in comparison to the other three groups.

When the CIS Group was compared with the CA Group, it was found that six predictor variables, namely, Sex, Tract Classification, GPA (Last 2 yrs.), Jr. High Attendance, and Curriculum - both General and Vocational, and the criterion measure of MSQ Gen. discriminated the two groups at statistically

significant levels. The CIS Group had better mean scores in Tract Classification, GPA (Last 2 yrs.), Jr. High Attendance, and MSQ Gen. The lower mean value of Jr. High Attendance actually indicated superior performance. The CIS Group had a higher proportion of male subjects, whereas in the CA Group the reverse was the case. This disparity in the composition of the two groups contributed to the higher mean score for Sex in the CIS Group. The same reasoning applies to Curriculum. A higher proportion of the subjects in the CIS Group had pursued the Vocational Curriculum, which accounted for their greater mean score in the area. In the CA Group a disproportionately high number of subjects had been enrolled in the General Curriculum while in the regular school, and this contributed to the higher mean value for this group in the General Curriculum area.

Compared to the other three groups, the PA Group was the lowest in the rung of Aptitude Measures. Interestingly, in Tract Classification the mean value was significantly higher than that of the CA Group, which occupied the lowest mean level in the area.

The above profiles of characteristics of the four study groups suggest the following major conclusions, to wit:

1) Socioeconomic conditions of the inner-city youth participating in Baltimore Public Schools have improved to certain extent over the last few years.

2) The mean values of the Aptitude Measures for the subjects in all the four study groups are rather low (For the GATB norms, $\bar{X} = 100$ and SD = 20). A student's profile with low G, V, N may indicate some school learning difficulties, among them the possibility of some reading problems (Christiansen, 1981). It, however, seems that for the regular school students these measures are on the rise.

3) The HCL center is serving a useful purpose, inasmuch as its vocationally oriented training program has helped the participants (CA Group) acquire the Aptitude Measures to the level of their compeers (CIS Group) from the regular school. This achievement is particularly noteworthy, as the trainees at the HCL center came from inferior home environment and had poorer school background.

4) The subjects at the HCL center (CA Group) were mostly students in the General Academic Curriculum while in the regular school. These students should have been placed in the Vocational Curriculum, which could have reduced the delinquency and the drop-out rates. As a matter of fact, the shift of emphasis to vocational training at the HCL center provided employment opportunities to this student body. Better guidance and counseling services in academic programming at the junior and senior levels are imperative for students having learning and behavior problems.

5) HCL center's outreach program seems to be quite effective. The center has graduated students (CA Group), whose earlier school records were very poor. In spite of their relatively better living conditions compared to that of their predecessors, the new HCL recruits (PA Group) had immense learning difficulty in school as evidenced from their poor performance on aptitude tests.

6) However, in regard to job adjustment, the results are discouraging for both the groups from the regular school (CIS Group) and from the HCL center (CA Group). This is more so for the HCL graduates who lagged behind their confreres from the regular school. The mean values of the MSQ Gen. measures for the CIS Group and the CA Group correspond to the percentile ranks of 28 and 14 respectively (For the MSQ norm of employed non-disabled persons, $\bar{X} = 77.86$ and $SD = 9.91$) (Weiss, 1967). It is obvious that the training program at the HCL center especially needs restructuring and redirection, if it is to succeed in its mission of career education and work orientation for the disadvantaged urban youth.

Intercorrelations of Experimental Variables

The correlation matrices for the experimental variables were computed separately for the CIS Group and the CA Group. Intercorrelations which were found statistically significant in the CIS Group are discussed below:

1) Sex, which had a higher proportion of males, was associated with lower GPA (Last 2 yrs.) ($p < .05$), signifying thereby that the school performance of the male subjects was far from satisfactory.

2) Lower Tract Classification was related to Vocational Curriculum ($p < .05$), as also to higher MSQ Gen. ($p < .05$). This indicated that the subjects coming from relatively poor home environment generally opted for vocationally oriented courses, and they were better adjusted to their present jobs.

3) High intercorrelations of GATB-G, V, N ($p < .01$) were due to the fact that the Aptitudes V and N are measured by tests that are also used to measure Aptitude G (United States Department of Labor, 1967, p. 30).

4) GATB-N was associated with GPA (Last 2 yrs.) ($p < .05$), as also with Jr. High Attendance ($p < .05$). In other words, students having relatively better school records obtained higher scores in Aptitude - N.

5) GPA (Last 2 yrs.) was also related to Jr. High Attendance ($p < .01$). These two school performance variables were inter-related.

6) Lower Jr. High Attendance was associated with General Curriculum ($p < .01$). It appears that students, placed in the General Academic Curriculum, missed classes more often because of their repugnance to the academic program.

7) GED Level was associated with Voc. Pref.-Job Congruence ($p < .01$); it also approached significance with MSQ Gen. ($p = .10$). Most of the subjects, who had attained the levels of general educational development demanded by their occupations, could be classified as having current job-aspiration congruence leading to stability of jobs. These people seem to be better adjusted to their job status.

8) Vocational Curriculum was inversely associated with General Curriculum, as expected ($p < .01$).

It would thus be observed that the zero-order correlation coefficients identified only two predictors, Tract Classification and GED Level, associated with MSQ Gen., the first one at a significant level ($p < .05$) and the second one approaching significance ($p = .10$).

However, a different picture emerged from the intercorrelations of the experimental variables for the CA Group. These findings are analyzed below:

1) Tract Classification was associated with GPA (Last 2 yrs.) ($p < .05$). That is, students having relatively comfortable living conditions performed better in school.

2) As in the CIS Group, GATB-G, V, N were highly intercorrelated ($p < .01$). Aptitudes G and V approached significance with lower MSQ Gen. ($p < .10$). This implied that the subjects having relatively higher abilities and aptitudes in these areas were rather dissatisfied with their current job status.

3) The relationship between Vocational Curriculum and General Curriculum was no different from that obtained in the CIS Group; the variables were inversely related ($p < .01$). Vocational Curriculum was also inversely associated with Voc. Pref. - Job Congruence ($p < .05$). It appears that most of the subjects, who had pursued the Vocational-Curriculum while in the regular school, were disillusioned with their present jobs. Such incongruity between jobs and aspirations, indicative of unstability, may be due to occupational constraints and/or unrealistic aspirations.

In the case of the CA Group, none of the predictor variables was significantly related to MSQ Gen. As mentioned above, only Aptitudes G and V, showing negative relationship with MSQ Gen., approached significance.

Stepwise Regression Analysis

Although the zero-order correlations of the predictor variables with MSQ Gen. were mostly nonsignificant, a stepwise regression analysis was performed separately for the CIS Group and the CA Group primarily to select from each group of predictor variables the one variable at each stage which made the largest contribution to $R^2$. Known as the coefficient of determination, $R^2$ estimates the proportion of variance in the criterion associated with or "explained by" all the predictors in the regression equation (Bridge, Judd, & Moock, 1979, p. 145). The results of the stepwise regression analyses are presented in Tables 3 and 4.

In the CIS Group all the eleven predictors, admitted into the equation, produced an overall $R^2$ of .164. But only the first two variables, Tract Classification and GED Level, accounted for an $R^2$ of .088 which was statistically significant. As noted earlier, the same two variables figured in the zero-order correlation with MSQ Gen.

As operationally defined, the unique variance explained by a predictor is the increment in $R^2$ when this predictor variable is added to the other predictor variables in the multiple regression analysis (Bridge, Judd, & Moock, 1979, p. 147). Thus, with two predictors - Tract Classification and GED Level,

the unique variance in MSQ Gen. in the CIS Group worked out to .052 and .035 respectively. The variance in MSQ Gen. explained jointly by these two variables was trivial (.088 - .052 - .035, or .001).

With the above two predictor variables, a (raw score) regression equation was developed for estimating MSQ Gen.:

$$\hat{Y} = -.785\, X_2 + 2.873\, X_8 + 70.504,$$

where $\hat{Y}$ = an estimated value of the criterion variable MSQ Gen., $X_2$ = Tract Classification, and $X_8$ = GED Level.

In the CA Group ten predictor variables entered into the regression analysis to produce an overall $R^2$ of .260. Only one variable, GPA (Last 2 yrs.), was not included in the equation because of insufficient F level. GATB-V, which approached significance in the zero-order correlation with MSQ Gen., was the first variable to enter the equation; but it could not produce a significant $R^2$. The other variable, GATB-G, which also approached significance in its relationship with the criterion, was much lower in the steps. This was primarily due to the "problem of multicollinearity," among the set of Aptitudes G, V, N. It is to be noted in this context that the overall $R^2$ of .260 might be rather inflated, because of the small number of cases (N = 40) relative to the number of predictor variables.

As no cross-validation test could be conducted for the stepwise analysis of the CIS Group, and as no statistically significant $R^2$ could be obtained from such analysis of the CA Group, substantive interpretations of the stepwise results are particularly difficult. As originally planned, this technological approach was supplemented by an explanatory analysis based on "causal priority."

Hierarchical Analysis

In the hierarchical model, sets of predictor variables were entered into the regression equation in a specified order with regard to their temporally or logically determined causal priority. The criterion's total variance ($R^2$) could thus be analyzed in terms of the proportion of such variance uniquely explained by each set of predictors. This is the only basis on which variance partitioning can proceed with correlated predictor variables (Cohen & Cohen, 1975; p. 98). Five sets of predictors as hierarchically ordered are already detailed in Table 1. The results of the hierarchical analyses for the CIS Group and the CA Group are depicted in Tables 5 and 6.

In the CIS Group, the demographic set (Sex & Tract Classification) accounted for 6.8% of the criterion's variance. An additional 2.1% of the variance was contributed by Aptitude Measures (GATB-G, V, N). School Performance set (GPA - Last 2 yrs. & Jr. High Attendance), and Curriculum (Vocational & General) respectively added 0.3% and 1.2% of the criterion's variance. Finally, Holland Typology (GED Level & Voc. Pref. - Job Congruence) produced an additional 6.0% of the total variance in the criterion variable. Although the F - values were not statistically significant at any of the steps, the hierarchical analysis did provide some indications as to the contributions of the research factors to the overall job adjustment of the subjects in the CIS Group. Whereas the total $R^2$ worked out to .164, the highest contributions to the criterion's variance were made by Demographic Characteristics (6.8%) and Holland Typology (6.0%). Aptitude Measures accounted for a moderate contribution of 2.1% to the variance. The impact of School Performance and Curriculum was minimal, accounting for only 1.5% of the variance in the criterion.

In the CA Group, the five sets of predictors produced an overall $R^2$ of .260. In this case the demographics accounted for 2.2% of the criterion's

variance, Aptitude Measures 13.7%, School Performance 0.4%, Curriculum 3.9%, and Holland Typology 5.8%. Here also the F - values were non-significant. In the CA Group, Aptitude Measures accounted for a substantial proportion (13.7%) of the criterion's variance, followed by Holland Typology (5.8%). Unlike Curriculum for the CIS Group, Curriculum for the CA Group produced a moderate amount of variance (3.9%) in the criterion. Demographic characteristics accounted for only 2.2% of the variance, much less than that produced by the corresponding set in the CIS Group. As expected, School Performance which included GPA (Last 2 yrs.) and Jr. High Attendance in the regular school system prior to their enrollment in the HCL Center had practically no effect on the job adjustment of the CA Group.

## Concluding Remarks

According to Holland's theoretical formulations, deficiencies in vocational development occur in a number of ways. The crux of the problem lies in a person's insufficient or conflicting experience about his interests, competencies and personal characteristics, and/or about the major occupational environments (Holland, 1973). The young, disadvantaged youth need occupational information, training and placement help to remediate these shortcomings. The regular in-school program, even with the work-study component, is not directly geared to the said objective. The HCL center, with its experience based career education program, has not also met with much success to serve as an implement agent for transition to the work world of the participating students - the high risk youth. The mean values of Voc. Pref. - Job Congruence in Holland Typology and of the criterion measure MSQ Gen. are very low for both the CIS Group and the CA Group - lower still

for the latter group. Both, pointing to the same direction, indicate that the subjects in the two groups are not quite well adjusted to their current job status.

It is, however, interesting to note that the mean values of GED Level in Holland Typology suggest that the subjects in both groups more or less acquired the level of education required to perform their present jobs. As a matter of fact, the unique variance in MSQ Gen. associated with GED Level for the CIS Group was statistically significant (see Table 3). The results of variance partitioning in the analysis of MSQ Gen. point out that Holland Typology made substantial contributions to $R^2$ for both the CIS Group and the CA Group. The effect of GED Level is, however, depressed in both the Groups, because of the low level of Voc. Pref. - Job Congruence. In other words, in the scramble for jobs, the subjects had to accept positions for which they were qualified but which may not quite correspond to their personality pattern. Job-aspiration congruence may be adversely affected by the distribution of jobs in the economy (Gottfredson, Holland, & Gottfredson, 1975), or labor market discrimination, or lack of realism on the part of job seekers. Most of the subjects in the study groups are, however, likely to change their aspirations over time to match the job category, as progression in this direction is the common mode of achieving congruence (Gottfredson & Becker, 1981). In fairness to the work-study program of regular schools and the career development program of the HCL center, it must be said that their training efforts have little control on some of the extraneous factors mentioned above.

The study subjects' ability to hold jobs on a long range basis, inspite of job-aspiration incongruence, can be better explained in light of Maslow's theory of basic needs. In the Maslovian sense, "the basic human needs are

organized into a hierarchy of relative potency" (Maslow, 1954). Lower-order needs, such as the physiological and safety needs are to be met, before higher-order needs can emerge. For the disadvantaged youth, job tenure provides the wherewithal to meet these basic survival needs. Most of the trait-factor theorists have tended to ignore the needs component from their trait-oriented approach to career choice. However, in the trait oriented research study conducted by the Work Adjustment Project at the University of Minnesota, needs (regarded as traits) together with environmental demands are used for prediction of job satisfaction, job effectiveness, and job tenure (Osipow, 1973; p. 211). The criterion measure, MSQ Gen., used in this study includes the ingredient of needs. An inference may possibly be drawn in support of the needs theory from an analysis of the data on Tract Classification (an index of socioeconomic status) and MSQ Gen. (an indicator of need satisfaction). Although the mean values of Tract Classification and MSQ Gen. are very low for subjects from both the in-school program (CIS Group) and the alternative program at the HCL center (CA Group), these values for the former group are significantly higher than that of their colleagues in the latter group. In other words, the subjects from relatively better home conditions experience more job satisfaction because of lesser needs; whereas, the position is reversed in the case of persons from more deprived homes. Voc. Pref. - Job Congruence in Holland Typology, which does not take into account the needs aspect, could not discriminate the two groups. Holland's theory seems to have limited application to the disadvantaged, marginally educated youth whose scope of occupational training and choice is rather restricted.

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TABLE. 1

Characteristics of Subjects in Four Study Groups
Based on Experimental Variables

| Variables | Study Groups | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Concurrent In-School (CIS) | | | Predictive In-School (PIS) | | | Concurrent Alternative (CA) | | | Predictive Alternative (PA) | | |
| | $\bar{X}$ | SD | n | $\bar{X}$ | SD | n | $\bar{X}$ | SD | n | $\bar{X}$ | SD | n |
| I. Demographic Characteristics | | | | | | | | | | | | |
| 1. Sex | .62 | .49 | 90 | .38 | .49 | 195 | .44 | .50 | 48 | .50 | .50 | 116 |
| 2. Tract Classfn. | 99.16 | 34.22 | 89 | 108.14 | 27.82 | 172 | 84.58 | 30.66 | 48 | 101.63 | 27.25 | 89 |
| II. Aptitude Measures | | | | | | | | | | | | |
| 3. GATB-G | 80.47 | 14.45 | 90 | 84.86 | 13.99 | 191 | 81.02 | 9.60 | 46 | 71.48 | 11.84 | 111 |
| 4. GATB-V | 85.27 | 11.03 | 91 | 88.14 | 12.17 | 193 | 83.17 | 12.32 | 46 | 78.13 | 7.06 | 111 |
| 5. GATB-N | 79.51 | 15.62 | 90 | 88.56 | 17.83 | 190 | 80.60 | 13.61 | 45 | 69.43 | 15.32 | 110 |
| III. School Performance | | | | | | | | | | | | |
| 6. GPA (Last 2 yrs.) | 740.40 | 93.95 | 89 | 760.11 | 75.54 | 178 | 539.43 | 140.32 | 46 | - | - | - |
| 7. Jr. High Attend. | 1.79 | .84 | 86 | 1.80 | .82 | 183 | 2.67 | .60 | 45 | - | - | - |

TABLE 1 (Contd.)

| Variables | Study Groups | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Concurrent In-School (CIS) | | | Predictive In-School (PIS) | | | Concurrent Alternative (CA) | | | Predictive Alternative (PA) | | |
| | $\bar{X}$ | SD | n | $\bar{X}$ | SD | n | $\bar{X}$ | SD | n | $\bar{X}$ | SD | n |
| IV. Curriculum (Reg. Sch.) | | | | | | | | | | | | |
| 8. Vocational | .54 | .50 | 85 | .55 | .50 | 194 | .20 | .41 | 49 | - | - | - |
| 9. General | .35 | .48 | 85 | .38 | .49 | 194 | .76 | .43 | 49 | - | - | - |
| V. Holland Typology | | | | | | | | | | | | |
| 10. GED Level | 3.09 | .83 | 86 | - | - | - | 3.22 | .73 | 46 | - | - | - |
| 11. Voc. Pref.-Job Congruence | .42 | .50 | 85 | - | - | - | .37 | .49 | 46 | - | - | - |
| VI. Criterion | | | | | | | | | | | | |
| 12. MSQ Gen. | 72.08 | 11.75 | 89 | - | - | - | 67.19 | 15.37 | 48 | - | - | - |

TABLE 2

Level of Significance for Selected Comparisons of Study Groups

| Variables ($\bar{X}$, SD, and n are presented in Table 1) | Study Groups | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CIS vs. PIS | | CIS vs. CA | | CA vs. PA | | PIS vs. PA | |
| | t Value | p | t Value | p | t Value | p | t Value | p |
| I. Demographic Characteristics | | | | | | | | |
| 1. Sex | 3.823 | .0002 | 2.099 | .038 | .726 | .469 | 1.995 | .047 |
| 2. Tract Classfn. | 2.282 | .023 | 2.464 | .015 | 3.342 | .001 | 1.805 | .072 |
| II. Aptitude Measures | | | | | | | | |
| 3. GATB-G | 2.432 | .016 | .235 | .815 | 4.844 | .0001 | 8.468 | .0001 |
| 4. GATB-V | 1.910 | .057 | 1.012 | .313 | 3.230 | .001 | 7.936 | .0001 |
| 5. GATB-N | 4.124 | .0001 | .398 | .691 | 4.252 | .0001 | 9.421 | .0001 |
| III. School Performance | | | | | | | | |
| 6. GPA (Last 2 yrs.) | 1.848 | .066 | 7.238 | .0001 | – | – | – | – |
| 7. Jr. High Attendance | .066 | .948 | 6.194 | .0001 | – | – | – | – |

TABLE 2 (Contd.)

| Variables ($\bar{X}$, SD, and n are presented in Table 1) | Study Groups | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CIS vs. PIS | | CIS vs. CA | | CA vs. PA | | PIS vs. PA | |
| | t Value | p | t Value | p | t Value | p | t Value | p |
| IV. Curriculum (Reg. Sch.) | | | | | | | | |
| 8. Vocational | .160 | .873 | 4.005 | .0001 | – | – | – | – |
| 9. General | .452 | .652 | 4.828 | .0001 | – | – | – | – |
| V. Holland Typology | | | | | | | | |
| 10. GED Level | – | – | .852 | .396 | – | – | – | – |
| 11. Voc. Pref. - Job Congruence | – | – | .597 | .552 | – | – | – | – |
| VI. Criterion | | | | | | | | |
| 12. MSQ Gen. | | – | 2.081 | .039 | – | – | – | – |

TABLE 3

Stepwise Regression Analysis for Job Adjustment:
Concurrent In-School Group (CIS) (Listwise)

(N = 75)

| Predictors | $R^2$ | $SE_e$ | Unstandardized Regression Coeff. | Standardized Regression Coeff. (Beta) | F |
|---|---|---|---|---|---|
| 2. Tract Classification | .053 | 11.925 | - .785 | - .230 | 4.086* ( 1/73 df) |
| 8. GED Level | .088 | 11.784 | 2.873 | .187 | 3.469* ( 2/72 df) |
| 5. GATB-N | .103 | 11.769 | .111 | .125 | 2.713 ( 3/71 df) |
| 11. Voc. Pref. - Job Congruence | .117 | 11.757 | 3.304 | .135 | 2.327 ( 4/70 df) |
| 3. GATB-G | .142 | 11.678 | - .233 | - .269 | 2.276 ( 5/69 df) |
| 1. Sex | .149 | 11.711 | -2.353 | - .096 | 1.987 ( 6/68 df) |
| 9. Curriculum-Vocational | .154 | 11.764 | 1.798 | .074 | 1.744 ( 7/67 df) |
| 10. Curriculum-General | .161 | 11.806 | 3.853 | .149 | 1.581 ( 8/66 df) |
| 4. GATB-V | .162 | 11.885 | - .674 | - .061 | 1.401 ( 9/65 df) |
| 7. Jr. High Attendance | .163 | 11.972 | - .419 | - .030 | 1.248 (10/64 df) |
| 6. GPA (Last 2 yrs.) | .164 | 12.064 | - .273 | - .022 | 1.119 (11/63 df) |

* $p < .05$

TABLE 4

Stepwise Regression Analysis for Job Adjustment:
Concurrent Alternative Group (CA) (Listwise)

(N = 40)

| | Predictors | $R^2$ | $SE_e$ | Unstandardized Regression Coeff. | Standardized Regression Coeff. (Beta) | F |
|---|---|---|---|---|---|---|
| 4. | GATB-V | .079 | 13.708 | − .259 | − .281 | 3.264 ( 1/38 df) |
| 8. | GED Level | .125 | 13.541 | 4.101 | .216 | 2.644 ( 2/37 df) |
| 10. | Curriculum-General | .141 | 13.604 | − 4.432 | − .127 | 1.966 ( 3/36 df) |
| 5. | GATB-N | .155 | 13.682 | .138 | .185 | 1.606 ( 4/35 df) |
| 3. | GATB-G | .222 | 13.322 | − .591 | − .677 | 1.938 ( 5/34 df) |
| 1. | Sex | .239 | 13.372 | 4.198 | .150 | 1.727 ( 6/33 df) |
| 11. | Voc. Pref. - Job Congruence | .253 | 13.456 | 3.596 | .125 | 1.546 ( 7/32 df) |
| 9. | Curriculum-Vocational | .258 | 13.628 | 5.737 | .147 | 1.344 ( 8/31 df) |
| 7. | Jr. High Attendance | .259 | 13.837 | 1.048 | .046 | 1.167 ( 9/30 df) |
| 2. | Tract Classification | .260 | 14.067 | − .140 | - .030 | 1.019 (10/29 df) |

Note. None of the F values is statistically significant

TABLE 5

Job Adjustment Regressed on Hierarchically Ordered Sets of Predictor Variables

Concurrent In-School Group (CIS) (Listwise)

(N = 75)

| | Sets of Predictor Variables | $R^2$ | $SE_e$ | F |
|---|---|---|---|---|
| I. | Demographic Characteristics | .068 | 11,915 | 2,607 (2/72 df) |
| II. | Aptitude Tests | .089 | 12,030 | 1,351 (5/69 df) |
| III. | School Performance | .092 | 12,186 | ,974 (7/67 df) |
| IV. | Curriculum | .104 | 12,290 | ,842 (9/65 df) |
| V. | Holland Typology | .164 | 12,065 | 1,120 (11/63 df) |

TABLE 6

Job Adjustment Regressed on Hierarchically Ordered Sets of Predictor Variables

Concurrent Alternative Group (CA) (Listwise)

(N = 40)

| Sets of Predictors | $R^2$ | $SE_e$ | F |
|---|---|---|---|
| I. Demographic Characteristics | .022 | 14.316 | .419 (2/37 df) |
| II. Aptitude Tests | .159 | 13.846 | 1.290 (5/34 df) |
| III. School Performance | .163 | 14.238 | .893 (7/32 df) |
| IV. Curriculum | .202 | 14.365 | .842 (9/30 df) |
| V. Holland Typology | .260 | 14.316 | .894 (11/28 df) |